SYSTEM AND METHOD FOR TRANSMITTING DATA ON RETURN PATH OF A CABLE TELEVISION SYSTEM

ABSTRACT

An optical signal return path system includes a transmitter having a sample clock generator for generating a sample clock and an RF signal receiver for receiving and converting an analog RF data signal into a first data stream of digitized RF data samples at a rate determined by the sample clock. Supplemental channel circuitry provides a second data stream. A multiplexor receives and combines the first data stream and second data stream, and an optical transmitter converting the combined data stream into a serialized optical data signal for transmission over an optical fiber. The second data stream may contain maintenance data reflecting an operational state of the transmitter. A receiver receives the optical data signal and recovers therefrom a digital data stream and an associated first clock having an associated first clock rate. The data stream is stored in a memory device at the first clock rate. A clock generator generates a second clock having an associated second clock rate that is adjusted in accordance with a clock control signal. A control circuit reads data from the memory device at a rate corresponding to the second clock rate and generates a fullness signal that indicates whether the memory device is more full than a predefined threshold fullness level. A clock speed adjusting circuit generates the clock control signal in accordance with the fullness signal.